



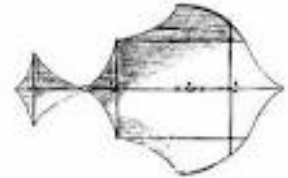
1853

Sir George Cayley and the first manned aeroplane flight

At Brompton Dale near Scarborough in 1853 the world's first successful flight by a passenger-carrying aeroplane took place. The flying machine, or glider, was made of wood and canvas and was the invention of Sir George Cayley, who was to become known as 'The Father of Aeronautics'.



The passenger was Sir George's coachman who reluctantly became the first ever person to take to the sky in a heavier-than-air machine. The glider was attached to a length of rope and towed off the sloping ground into the air by a galloping horse. The plane flew a short distance across to the far side of the dale. Since that momentous day over 160 years ago, the aeroplane has continuously developed and is now an essential part of our modern world.



Sir George designed a wing based on the shape of a fish, with a streamlined cross-section called an aerofoil, that is almost identical in shape to that used on the modern jet planes of today.

Sir George Cayley was undoubtedly a very clever man indeed. He was a great inventor, not only of the aeroplane, but of many other things that we take for granted and benefit from in the modern world today. His inventions include the spoked bicycle wheel, the caterpillar or tank track, train buffers and seat safety belts for passengers, safety curtains for theatres, a self-righting lifeboat, a type of parachute, a special pen nib, and agricultural machinery.



Sir George was a compassionate man who cared about other people. When the son of one of his tenants lost his hand in an accident, Sir George designed and manufactured a false hand, called a prosthetic, that had moving joints and when worn with a glove looked exactly like a real hand.

Next time you see a jet passing overhead, think back to that time in 1853 in Brompton Dale, when Sir George Cayley's glider took to the skies and changed the world.

QUESTIONS & ANSWERS

1. When and where did the first manned, passenger carrying, aeroplane flight take place?

1853 at Brompton Dale near Scarborough.

2. What was the flying machine made of?

Wood and canvas.

3. Who was Sir George's reluctant passenger?

His coachman.

4. How was the glider towed off the ground?

With a length of rope attached to a galloping horse.

5. How far did it fly?

A short distance over to the far side of the dale.

6. What did Sir George base the shape of his flying machine on?

A fish.

7. Below you can see simple diagram of an aerofoil, like Sir George Cayley's. Why do you think this shape helps aeroplanes fly well?



It is streamlined and there is a lack of air resistance

8. Write down three more things that Sir George invented.

Spoked bicycle wheel, the caterpillar or tank track, train buffers and seat safety belts for passengers, safety curtains for theatres, a self-righting lifeboat, a type of parachute, a special pen nib, agricultural machinery

9. As you might have said, Sir George invented caterpillar or tank tracks. What do you think is their purpose?

They spread the load (or weight) of a vehicle. Narrow wheels dig in to soft ground, so the caterpillar track helps vehicles travel across boggy ground.

10. What is another name for a false limb (hand or leg)?

Prosthetic

Find out more:

- The Yorkshire Air Museum, Elvington, York YO41 4AU, has a life-size replica of the original sailplane, <http://yorkshireairmuseum.org/>
- The Royal Aeronautical Society has articles, a podcast and digitised copies of Sir George Cayley's notebooks, <https://www.aerosociety.com/>